



REPORT
OF A
Special Committee of the City Council,
ON THE
IMPROVEMENT
OF THE
FIRE DEPARTMENT.
AND ALSO,
ON THE BEST MEANS OF OBTAINING AN ADDITIONAL SUP-
PLY OF WATER FOR FIRE PURPOSES, FOR
THE CITY OF HALIFAX, N. S.

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REPORT.

THE Committee appointed to take into consideration, the condition of the Fire Department of this City, and also, the best means of obtaining an additional supply of Water, for Fire purposes, beg to present their Report.

Before proceeding to the subject matter of their Report, the Committee deem it due to themselves, and to the community, to make one or two explanations, by way of accounting for apparent neglect of a most important enquiry. The Committee was first appointed, immediately subsequent to the great conflagration of 9th September, but they had scarcely commenced their labours, when the Committee was disorganized, by the retirement of several members, consequent upon the Annual Civic Election. The choice of officers and other necessary business, prevented the appointment of a new Committee until late in October, since which time, the members of this Committee, being much occupied with other Committees, as well as with their own private affairs, it was not possible to report at an earlier date.

The Committee, also, take this opportunity of stating, that they do not hold themselves accountable for any communications, anonymous or otherwise, upon this question, which may have appeared in the newspapers.

The Committee have directed their attention to the several papers submitted to them by the Council; as follows:

1st. Memorial of Edward J. Longard; received by the City Council 11th March, 1859.

2nd. Memorandum of Alderman Twining; submitted 9th August, 1859.

3rd. Letter from Hon. Wm. Young, A. Scott and H. Hartshorne to His Worship the Mayor, dated 12th September, 1859.

4th. Letter from the Secretary of the Halifax Water Company to His Worship the Mayor, dated 13th September, 1859.

The Memorial of Mr. Longard, proposes a scheme for supplying the City with Water, for Fire purposes, exclusively ;— the supply to be drawn from the Birch Cove Lakes.

The Memorandum of Alderman Twining suggests the appointment of a Committee, to enquire into the expediency, and feasibility, of purchasing the Water Works, and property, of the Halifax Water Company.

Messrs. Young, Scott and Hartshorne's Letter has reference to the late Fire, and makes certain suggestions, relating thereto, such as, the laying down of additional Water Pipes, the use of Steam Fire Engines, and the enlargement of the Fire Companies.

The Communication from the Secretary of the Water Company embodies a proposition from the Company, agreeing to adopt the suggestion of Messrs. Young, Scott and Hartshorne by " laying down a 12-inch pipe from the Ball Court, at the south end of Gottengen Street, to Brunswick Street, and thence continued south along Barrack Street to Sackville Street ; and lead 6-inch branch pipes therefrom, down Sackville, Prince, George, Duke and Buckingham Streets, to Sackville Street ; laying a new 6-inch pipe along Hollis Street, between Sackville and Buckingham Streets ; the branch pipes to have a suitable number of fire-plugs attached to them, and to be used solely for fire purposes ; for the annual rent or sum of three hundred and fifty pounds."

The Committee have named the several papers in the order of their respective dates, but do not propose discussing them in that connexion. Indeed the whole subject naturally divides itself into two branches,—the improvement of the Fire Department, and an additional supply of Water.

In reference to the Fire Department, the first topic the Committee had under consideration, and indeed, as far as they were capable of judging, the principal defect of the Depart-

ment, was the admitted want of Firemen. The whole number of regular efficient Firemen, in the city, does not exceed one hundred, whereas, in the opinion of this Committee, there ought to be, at least, four hundred. Less than that number will not suffice for the proper working of the Engines. It then becomes a question whether the present Engine Company should be enlarged, or a new Company formed, with a different set of duties. The Committee incline to the latter view.

If the business of the Union Engine Company were confined, solely, or chiefly, to the charge of the Engines, the Hose, and the Gear,—as, indeed, it should be,—it is the opinion of the most experienced Firemen, that the present Union Engine Company is strong enough for that purpose ; all that is required, is a Company of able-bodied men to assist in working the Engines, after they are brought to the scene of action. Without any doubt, such a Company could be raised in the city ; but a difficulty arose, as to the question of compensation. The Union Engine Company, as is well known, receive compensation by the remission of road money, and exemption from certain civic duties. A similar rule is followed in other cities, and in some—such as Boston, for instance—Firemen receive a direct remuneration in money.—In the last named city, in the year 1851, the amount paid for services of Firemen alone, without reference to any other expense of the Fire Department, exceeded fifteen thousand pounds,—a sum greater, in fact, than the whole revenue of our city. The pay of ordinary members of the Fire Companies in Boston, is one hundred dollars *per annum*, for each man.

It is obvious, that we cannot venture to imitate such liberality as that. Neither is it to be forgotten, that the payment of three or four hundred men, either by remission of taxes, or by wages in money, would withdraw just so much, from our available resources. Take, for instance, the lowest sum

proposed for direct payment—that is, ten dollars, a year, for each man. Three hundred men, at ten dollars each, will make £750; a sum which looks small, in comparison with the munificence of Boston; yet still, a very large sum for us. On the other hand, it has been urged, that any sum that we could afford to pay, would be really no consideration to any man above the condition of a pauper, and would fail to attract those whose co-operation it is most desirable to secure. If the respectable classes—the merchants, tradesmen, householders, and above all, the young men, natives or residents, of the city, would look at this matter in its proper light, there would be no necessity for the offering of any inducement, beyond what would be suggested by public duty, and mutual protection. In former times, there were Fire Companies in Halifax, and efficient ones too, based upon such principles; then why not reorganize such Companies? The Committee are convinced, it would be doing great injustice to the members of the Union Engine Company, to suppose, that they give their zealous and valuable services from no higher motive, than for the sake of the paltry privileges allowed them.

The time may come, when the population and wealth of the city may warrant other arrangements, but in the meantime, and for some time to come, the Committee believe we must trust largely to voluntary exertion. It is, therefore, recommended, that a Company, or Companies, of not less than 50 able-bodied men, be raised in each of the six wards of the city, to be organized into one or more brigades, for the purpose of assisting at Fires, by working the Engines; and that the duty of organizing said Companies, in all 300 men, be left in the hands of the Firewards. The Committee have much pleasure in adding, that the Chairman of Firewards, D. Murray, Esq., has entered warmly into the project, and has undertaken, with the aid of his fellow-citizens, to carry it out.

The Committee cannot dismiss this part of the subject without some reference to the Military and Naval Departments.

On behalf of the citizens, the Committee acknowledge with gratitude, the exertions of Her Majesty's Soldiers and Sailors, at Fires, in times past ; but it is not to be denied, that the presence and active assistance, of so large a force of disciplined men, on such occasions, has led to a most culpable supineness, on the part of the inhabitants generally.

This state of affairs is not creditable, and has not unfrequently served to promote feelings of jealousy and irritation, which it is hoped, the formation of the proposed Company, will in future, have a tendency to prevent. At the same time, it is gratifying to perceive that the General Commanding has freely tendered the use of the Troops, in future, at Fires,—provided, the proper application be made for their services.

Upon the suggestion of the Firewards, the Committee recommend, that His Worship, the Mayor, or the Chairman of Firewards, may have power to make application to the General Commanding, for the use of the Troops at Fires ; and that, in the absence of His Worship the Mayor, any two Aldermen ; or in the absence of the Chairman of Firewards, any two Firewards, shall have the same power.

The question of Steam Fire Engines next engaged the attention of the Committee. These machines, it appears, are coming into extensive use in other places. They have been successfully introduced into the Fire Departments of Philadelphia, Baltimore, Boston, and other cities in the United States. In Boston, there are several, which are said to be working very satisfactorily. The Mayor of Boston states that, they are gradually taken the place of the common Hand-engines, and that, in consequence of their introduction, he hopes next year, to be able to reduce the expense of the Fire Department, some 20 or 30 thousand dollars.

The exertion necessary to work fire engines, by hand labour, is so exhausting, that it is very desirable steam power should be used, if possible. To be really useful, however,

with us, Steam Fire Engines should be portable, and constructed on such a principle, as not to be easily put out of order. From the Report of the Special Committee appointed to make trial of Steam Fire Engines in Boston, last year, it appears, that of 4 Engines—the best that could be procured—one weighed, 7,330 lbs., another, 7,480 lbs., another, 9,330 lbs., and the fourth, 9,415 lbs. The shortest time occupied in raising steam to 60 lbs. pressure, from cold water, was $10\frac{1}{2}$ minutes. The greatest horizontal distance thrown of a single stream of $1\frac{1}{4}$ inches, through 200 feet of hose, was 163 feet, and the greatest vertical height 110 feet. This does not seem a very wonderful performance, but the advantage is, that a Steam Engine would continue to throw such a stream as long as it was supplied with fire and water. On the other hand, the weight, being three or four tons, would require, at least four horses to move one of them on a level, and six horses, when it would be necessary to ascend a hill. The cost of one of these Engines, in Boston, is about three thousand dollars.

As a Steam Fire Engine would be of comparatively little use, until the city is better supplied with water, and as it is highly probable that a cheaper and lighter class of steam machines will be introduced before long, the Committee think it would be wise to make further enquiry before purchasing a Steam Fire Engine, and suggest that His Worship the Mayor shall take such steps, by correspondence, or otherwise, as will put the Council in possession of the latest information on this point.

This brings the Report to the discussion of what is after all, the real difficulty—the obtaining of a more abundant supply of water.

The Directors of the Halifax Water Company, in a statement recently submitted to the public, complain of some want of courtesy, on the part of the City Council, and of this Committee, in reference to their proposition, previously described.

The Committee regret this slight misunderstanding, as they are very sure the omission adverted to, was accidental, and was not intended to be disrespectful.

There is, however, an inconsistency in the statement of the Water Company. The document sets out by shewing the anxiety of the Directors to give an additional supply of water, and to make such arrangements as would ensure the city against the recurrence of terrible visitations by Fire; thereby intimating their opinion, that a better supply was required.— In the concluding part of the same statement, they undertake to prove, very confidently, that on the night of 9th September last, there was an ample supply of water in the pipes; some of the plugs being so full as to burst the hose; and that the alleged inefficiency was not in accordance with the facts. If such was really the case, the Committee cannot understand how the Directors of the Water Company can expect the city to pay three hundred and fifty pounds yearly, for an additional supply of water, for fire purposes, when, it may be inferred from their argument, an additional supply was unnecessary.

Apart from this discrepancy, the Directors of the Water Company, now propose to lay down a 12-inch pipe, by the Ball Court to Brunswick Street; thence south by Barrack Street to Sackville Street, with 6-inch pipes down all the intermediate streets; and a 6-inch pipe in Hollis Street, from Sackville to Buckingham Streets.

The Committee have no doubt this would be an improvement as far as it goes; though it differs, very widely, from the views of Mr. Stone, the gentleman sent out from England to enquire into the cause of the late Fire. According to Mr. Stone's notions, as detailed by him, in a memorandum submitted to the Committee, there should be a main pipe of not less than 3 feet, from the Long Lake to St. Andrew's Cross; then a 2 feet main to the south end of Barrack Street, and another, to the north end of Brunswick Street, with 12-inch mains in every principal street of the city.

It may be said, these are merely the opinions of an Agent of the Insurance Offices, and that his views are extreme ; yet it should be remembered that Mr. Stone has had very large and long experience in such matters, which ought, in justice, to give his opinions great weight. St. John, New Brunswick, is supplied by a 12-inch and a 24-inch main ; the 24 inch main being, of itself, equal to five 12-inch mains. These two main pipes empty into a tank, which again supplies 6 mains of 12 inches each, which, with other main pipes, chiefly 10-inch—and none less than 4-inch—are distributed over the city.—There are 93 fire plugs in St. John, exclusive of 18 in Portland,—while we have but 43.

But even supposing the proposed additions of the Water Company to be sufficient for the central part of the city,—it is evident, that after the additional pipes are laid, the north and south districts of the city will be quite as badly provided as before. The offer of the Water Company, in fact, proposes to protect a part of the city, in consideration of a certain sum, which must, of course, be derived from assessment levied upon the whole ; with this additional disadvantage, that were a Fire to break out in the part unprotected,—which is chiefly of wood,—it might gain such headway, as to endanger every part alike. It does not affect the argument, that the new pipes are to be laid down in the most valuable business portions of the city ; inasmuch, as the north and south districts include vast numbers of houses, both of rich and poor ; and surely, it must be admitted, that the lives and dwellings of, at least, one half of the population, most of whom would pay their proportion of the fire tax, are as much entitled to protection, as the warehouses and merchandize of the other half.

The Committee are of opinion that £350 in addition to the £650 already paid, is too large a sum to pay yearly, for a protection, limited in extent, and of somewhat doubtful efficiency. They recommend, therefore, that the offer of the Water Company be not accepted.

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The two remaining topics are the most important of all, as they contemplate large operations, and heavy expenditures.

At this stage of the enquiry, it may not be uninteresting, nor uninstructive, to shew, what efforts other cities have made, to obtain the inestimable benefits, of an abundant supply of pure water.

The New Water Works of Glasgow, lately inaugurated by Her Majesty the Queen, cost a million and a half of pounds sterling, or about three pounds sterling per head of the population. The Liverpool Water Works cost about the same sum. New York has expended twenty millions of dollars on her Water Works, or about forty dollars per head of the population, and the works are still in progress. The Boston Cochituate Works have cost some six millions of dollars, or about thirty dollars per head; while in our own British Provinces, Montreal has expended four hundred and twenty thousand pounds, or twenty-four dollars per head, and Quebec two hundred and twenty-eight thousand pounds, or twenty dollars per head. To come still nearer home, we may instance St. John, New Brunswick. The population of St. John is not much greater than the population of Halifax; her wealth and resources, certainly not superior to our own. St. John has embarked one hundred thousand pounds in her Water Works, and considers the investment, one of the best, in every sense, ever made for the city.

It will thus be seen, that we are somewhat behind the age, in this, as in some other matters. To be prepared for a liberal outlay, in some mode or other, is in fact, scarcely optional with us any longer. If we refuse to pay for water, we will be obliged to pay a larger tax in some other way. Supposing the rates of insurance to be doubled—as they may be; there is, at once, an extra sum of ten or twelve thousand pounds to be paid, every year, in cash—a sum more than sufficient to pay the interest on a capital of £150,000. To say nothing of protection from Fire, and the large amount which would

be saved in the way of insurance, which a really efficient system of Water Works would give us, there are the additional considerations of health, cleanliness, and the promotion of manufacturing industry. Then, there is the question of Sewerage, which, before many years, will be forced upon this Council, but which, without an abundance of water, will be absolutely unmanageable. It is impossible to over-estimate the beneficial effects of a plentiful supply of water. It would be worth some thousands of pounds, every year, if our city could, thereby, be effectually relieved of the one single nuisance of dust, which every Summer pollutes our atmosphere, and spoils our goods. The Committee trust these remarks will not be deemed irrelevant.

The Resolutions of Alderman Twining, in reference to the purchase of the Halifax Water Company's Works, are, of course, based upon the presumption, that the Company are willing to sell. The Committee have reason to believe this to be the fact, though they are not, at present, in a position to state, precisely, what sum would be required for the purchase. It certainly, however, would not exceed £50,000; probably, something less than that amount would suffice.

Upon the general principle involved in Alderman Twining's Resolutions, the Committee think there can hardly be much difference of opinion. They are firmly persuaded, it would be greatly to the advantage of the community, for the city government to have control of all such works. But there are some grave points which ought to be discussed, previous to the opening of negotiations with the Water Company. To make these works thoroughly efficient, for every requirement of the city, and having reference to the future, as well as the present,—an expenditure of not less than forty or fifty thousand pounds, will be necessary. This is a startling statement, but, upon examination, it will be found to be not very wide of the mark.

It is a well known fact, that the water will not rise, with

any force, in the north suburbs of the city ; in the vicinity of the North Barracks, for instance ; which, before ten years, will be a very populous district. It is laid down, as a rule of engineering, that the efficiency and value of any system of water supply, is in direct proportion to the quantity of water which can be stored with sufficient head, as near as possible to the points of consumption. The water systems of New York and Boston, though so enormously costly, are said, still, to be defective, from the want of head pressure ; the nature of the ground not permitting better arrangements. These defects, in the water systems of the cities alluded to, are in some measure remedied, by larger main pipes, and by reservoirs.

Now, it has been ascertained by the actual measurements of Mr Gossip, that the plug at the corner of North and Gottingen Streets is, in fact, higher than the point where the water pipes diverge at St. Andrew's Cross ; while the long ridge to the westward and northward of North Street, is 197 feet above low water mark,—being as high, if not higher, than the surface level of the Long Lake. When it is borne in mind, in addition, that the lake itself, is five miles distant, without any intervening reservoir,—we have in these facts, a sufficient explanation of the inefficiency of the Water Works at the North end of the city. The same reasoning applies though in a less degree, to the south suburbs, where the ground is lower ; yet the distance, operating with an extended system of distribution, deprives the water of the necessary force.

To make the present Water Works, therefore, thoroughly efficient, for fire purposes, and for the supply of every part of the city, would involve, first,—the laying down of larger pipes, from the lake, and through the city ; second,—the construction of a reservoir sufficiently elevated to command the highest streets ; and thirdly,—the cost of machinery, suitable for the purpose of keeping the reservoir always full of water.

The Committee are under the impression, that the improvements indicated, cannot be effected, at a cost, much, if

any, less than the sum named. It is true, that for many purposes, the present Water Works, might be made with a comparatively small outlay, to answer tolerably well for some years to come; but in the all-important matter of protection from fire, it is their belief, that any patching of the present system, is mere trifling; the only result of which will be, to waste money, and to engender a false security; which may possibly terminate in some calamity, more serious than any that has yet occurred. When the water was first introduced into St. John—some years ago—the engineer recommended the laying down of a 24 inch instead of a 12 inch main, but the difference of cost—some £12,000, was thought to be an insuperable objection, and the 12 inch main was laid. Not many years after, the citizens of our sister city, lost one hundred and fifty thousand pounds, in one night, simply from the want of a sufficient supply of water.

It was the inefficiency of our Water Works for fire purposes, that first turned Mr. Edward Longard's attention to this subject. The Committee will leave the further consideration of Alderman Twining's Resolutions, for the present, in order to explain Mr. Longard's scheme. As an intelligent native mechanic, and an experienced fireman, who has devoted much time, and thought, to the question of water supply, it is but fair to Mr. Longard, to state his views in detail.

Starting with the conviction, that the Long Lake can never afford sufficient head pressure, by the natural power of gravitation,—Mr. Longard proposes to bring the water from the Birch Cove Lakes, into a Reservoir, to be built on Shaffroth's hill, and thence, by three main pipes into the city,—one for the north—another for the middle—and another for the south district. The Birch Cove Lakes having an elevation of 237 feet, which might be raised by damming to 240, or even to 245 feet, would be sufficient, without mechanical aids, to fill the reservoir on Shaffroth's hill; the summit of which is some 230 feet above the sea, and admirably situated for command-

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ing the whole city. From this height, the water would descend upon the city, throughout its whole length, with such force, that the present Engine Company would be able, without assistance, either from the citizens, or the military, to subdue a fire, in far less time, than it could possibly be accomplished by 500 men, with the present defective water-system.

"By the proposed scheme, 16 efficient jets could be concentrated on any point in the city below Barrack street, each jet delivering, at least, 100 gallons a minute—in all 1600 gallons each minute; and in all the higher and suburban parts of the city an ample supply would be furnished."

Mr. Longard computes the cost of this work not to exceed £40,000, and that the interest and other annual expenses, would not be over £2600, while the saving in insurance alone, would be, at least, double that amount; leaving a yearly surplus, of clear gain to the citizens, of some £2500.

The Committee are free to admit, that, in their judgment, Mr. Longard's scheme is simple and intelligible, and supported by facts and arguments, which cannot fail to produce a strong impression on the public mind. The calculation of saving, in the item of insurance, is a most modest one, Mr. Longard having based it upon a supposed reduction of one-eighth per cent, while the probability is, that one half per cent would be much nearer the truth. The very first year after the introduction of the Croton Water into New York, the premiums of insurance were reduced, on an average, 40 cents on the hundred, while the expenses of the Fire Department, which had previously been seventy thousand dollars, fell the same year, to thirty thousand. The want of water, this year, will impose an extra tax, upon our own citizens, of certainly not less than ten thousand pounds.

Were there no Water Works already in Halifax, the Committee would have no hesitation in recommending Mr. Longard's scheme for the adoption of the Council. There are, however, certain advantages to be derived from the purchase

of the Water Company's Works, which ought not to be overlooked. There is the great advantage of having so much work already done, and an income at once available ; which income, the Committee believe, might be considerably increased, by judicious management, under civic control, without becoming a grievance to any citizen.

The Committee are very loth to assume the responsibility of advising in this matter, but they have arrived at certain conclusions, which they now submit for the consideration of the Council.

The present Committee was called into existence, chiefly for the purpose of considering the best mode of obtaining a larger supply of water for fire purposes ; but the Resolutions of Alderman Twining, which were submitted to the Council previous to the Great Fire, having been referred to this Committee,—the field of enquiry is, thereby, proportionally enlarged. Indeed, the Committee feel, that they have now the whole question of water supply for the city before them, and the exigencies of the time demand, that it should be dealt with in a comprehensive spirit.

Taking this broad view of the question, the Committee, then, have two schemes presented for their consideration ; either of which, for about the same cost, it is believed, may be made to answer every requirement of the city ; and to each of which, certain peculiar advantages, and disadvantages, appertain.

Supposing the purchase of the Halifax Water Company's Works, which, at present, barely suffice for domestic purposes, to require £50,000 ; it would require another £50,000, to make them efficient for fire purposes, and for the supply of the upper parts of the city. But an advantage would be gained by having a great part of the work already completed.

On the other hand, supposing Mr. Longard's scheme to be adopted ; the carrying out of this scheme, solely for fire purposes, would cost some forty or fifty thousand pounds, while

to extend it through the city, so as to make it available for every purpose, would cost some fifty thousands additional ; beside keeping the streets in confusion for years to come.

It is thus apparent, that neither scheme is perfect, and that either scheme fully developed, so as to be made capable of supplying the wants of the whole city, would cost, somewhere in the neighbourhood of £100,000.

Such being the state of the case, and assuming no better plan to be presented to the Council, the Committee suggest, whether, upon the whole, it would not be best for the city, partially to adopt both schemes, and thereby secure the advantages of each, without incurring the inconveniences of either. The Committee have an impression that the present Water Works could be purchased, and put in good working order, for a sum, not exceeding £50,000 ; and that for another £50,000—perhaps for less money—an ample supply might be obtained, by Mr. Longard's scheme, for fire purposes, and for the supply of the higher parts of the city. The cost of both schemes, would thus, not exceed, what it would be necessary to expend, to make either scheme perfect ; and the city would enjoy the unquestionable benefit of having two sources of water supply, instead of one.

The Committee do not consider it any part of their duty, to suggest the mode, by which the capital, necessary for these operations, may be raised ; yet it is their conviction, that in a financial point of view, the enterprise would be a safe one.—A fire tax, levied upon real estate, would meet the interest of half the capital ; and the other half would be more than met, by the revenue derivable from consumers.

The Committee present the above view of the case, as the best practical solution of a perplexing problem which, at this time, occurs to their minds,—reserving to themselves, of course, the right to adopt any more feasible plan that may be suggested.

As a preliminary step, however, and taking all the circum-

stances into consideration, the Committee finally recommend :

That the City Council shall, forthwith, or as soon as may be convenient—consult some competent and experienced Engineer, whose advice and opinions may enable the Council to decide, what is best to be done, in order to accomplish the desired end.

This course was adopted by the city of St. John, in like circumstances ; as well as by Montreal and Quebec ; and from the Report, lately published, it appears, that a precisely similar course was pursued, by the Common Council of Glasgow, before they embarked in that splendid scheme, by which they have recently introduced the water into the city from Loch Katrine.

The Committee cannot be supposed to know, and do not pretend to know, more of the matter under discussion than many of their fellow-citizens. They have endeavoured to discharge a very difficult task to the best of their ability, in the hope that such measures will ultimately be adopted by the Council, in reference to the supply of water, as will meet the expectations, and satisfy the present and future demands, of the whole community.

In conclusion, the Committee have to acknowledge the friendly co-operation and assistance of His Worship the Mayor, the Chairman and Ex-Chairman of Firewards, Mr. Muir, Superintendant of the Halifax Water Works, and of several members of the Fire Department. They have also to tender their thanks to F. W. Lincoln, Junr., Esq., Mayor of Boston, and John M. Walker, Esq., Commissioner of Water Works at St. John, New Brunswick, for much valuable information, furnished with obliging promptitude.

All of which is respectfully submitted,

JOHN A. BELL,

Chairman.

HALIFAX, N. S., 2ND DECEMBER, 1859.

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